AMENDMENTS TO THE SPECIFICATION:

Please add the following new paragraph before the paragraph which begins on line 3 of page 2:

As described therein an orthogonal training sequence can be developed for a channel that is described as a finite impulse response (FIR) filter having a length M_{new} from the already existing orthogonal training sequences for at least two channels that have respective lengths M_{old1} and M_{old2} each that is less than M_{new} such that the product of M_{old1} and M_{old2} is equal to M_{new} when M_{old1} and M_{old2} have no common prime number factor. More specifically, a set of initial existing orthogonal training sequences is found, e.g., using those that were known in the prior art or by performing a computer search over known symbol constellations given a channel of length M. Thereafter, an orthogonal training sequence of length M_{new} is developed, where the product of M_{old1} and M_{old2} is equal to M_{new} by repeating the training sequence old1 M_{old2} number of times to form a first concatenated sequence and repeating the training sequence old2 M_{old1} number of times to form a second concatenated sequence, so that both the first concatenated sequence and the second concatenated sequence have the same length. Each term of the first concatenated sequence is multiplied by the correspondingly located term in the second concatenated sequence which is placed in the same location in a new sequence made up of the resulting M_{new} products. This new sequence is an orthogonal sequence of length M_{new}. If there is more than one existing orthogonal sequence for a particular length channel, e.g., there may be different orthogonal sequences for different modulation schemes for the same length channel, the implementer may choose which ever orthogonal sequence gives the results desired. Often, for practical applications, the result that yields the modulation scheme that is most suitable for use with the actual channel, which may yield the highest speeds, or the result that yields the smallest alphabet, which would reduce the hardware required for implementation, is desirable.

Please replace the paragraph beginning on page 7, line 1 with the following amended paragraph:

FIG. 3 shows an exemplary embodiment of receiver 133 but in which band-limiting filter 301 is interposed between demodulator 109 and FIR filter 111. Note that in accordance with the principles of the invention, no such bandlimiting filter, or any corresponding filter for that matter, exists in the transmitter between orthogonal sequence source 101 and modulator 103, i.e., the transmitter is exactly the same as transmitter 131 as shown in FIG. 1. The purpose of band-limiting filter 301 is to eliminate any out-of-band noise that may have been introduced into the baseband demodulated received training signal at receiver ~~131~~ 133 prior to being supplied to FIR filter 111. Theoretically such a filter is not required but as a matter of practicality it is good practice to include such a filter. In other words, band-limiting filter 301 reduces out-of-band emissions that creep into the system but are not inherently caused by operation of orthogonal sequence source 101 or modulator 103.

Please replace the paragraph beginning on page 8, line 17 with the following amended paragraph:

Each of modulators 503 receives as input respective one of either the training signal as it is supplied by orthogonal sequence source ~~101~~ 501 or one of the delayed versions supplied by delay elements ~~503~~ 523. In accordance with an aspect of the invention, the training signal is supplied to modulators 503 without any filtering being performed between orthogonal sequence source ~~101~~ 501 and modulator ~~103~~ 503. Modulator 503 modulates each of the original or delayed training signals using a carrier signal e^{jwk} that is also received as an input by each of modulators 503 to produce modulated training signals. The modulated training signals are supplied as an output by each modulator 503, e.g., to a respective one of optional antennas 505. Each of optional antenna 505 broadcasts its modulated training signal as a wireless signal.